

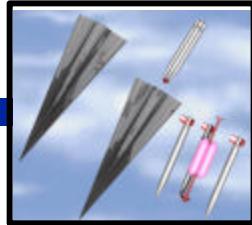
REQUIREMENTS FOR A CONVENTIONAL PROMPT GLOBAL STRIKE CAPABILITY

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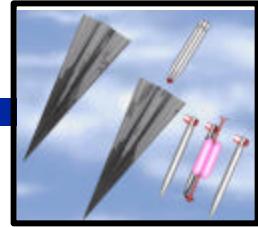


What is Prompt Global Strike (PGS)?

- **Definition:** Rapid delivery of conventional weapons at intercontinental range
- **Focus:** Conflicts or Emergencies requiring rapid surgical strikes of limited scope

PGS Mission Need Statement (draft v.8):

“The PGS mission need is to globally strike and precisely apply force against specific targets swiftly to achieve desired weapons effects. The need includes the ability to strike high-value, difficult-to-defeat targets when most vulnerable from beyond range of an adversary’s ability to respond, thus minimizing effects of counter-access strategies.”

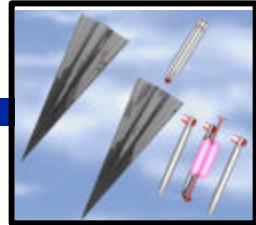


Why PGS?

- Threats to US interests have multiplied, diverged since end of Cold War
- Forward-Deployed and –Deployable Forces (FDFs) limited in number, very expensive, and face anti-access strategies
- Adding a PGS as complement to FDFs could allow faster, cheaper response with reduced risk

Air Force Doctrine Document 1 (AFDD-1):

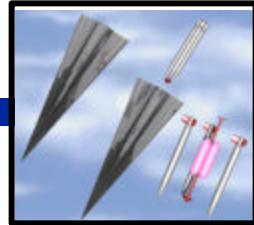
"US forces overseas have been reduced significantly, while rapid power projection based in the continental United States has become the predominant military strategy."



PGS Response Time

- PGS timeline must be as short as technology allows:
- **Tactical Ballistic Missiles (TBMs) take 2-4 hours to deploy, set up, and launch**
- **Other targets (aircraft arming for strike, submarines leaving port, etc.) also vulnerable only for short times**



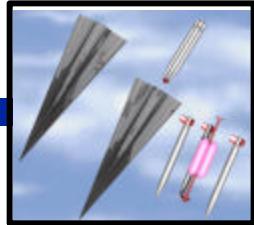


Limits on Current Solutions

- Air Expeditionary Forces (AEFs):
 - Need prepared airfields in theater
 - Need 48 hours or more to deploy
 - Distant air strikes from US need massive logistic support and in-theater escorts
- Carrier Battle Groups:
 - Navy says too few to cover all trouble spots
 - Response time can be over 96 hours
 - Limited to strikes a few hundred miles from carrier



Iraq's conquest of Kuwait was a surprise to the US and was completed in 36 hours.



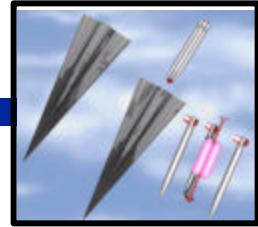
Anti-Access Threats

- Politics (basing, overflight rights) always problematical
- Adversaries will counter US conventional strength by:
 - Using missiles and WMD against ports and airfields
 - Missile strikes, WMD, and unconventional strikes against deployed forces
 - Intimidating local nations into denying US access
- National Defense Panel Study predicted a future in which US would be unable to deploy without high risks, casualties



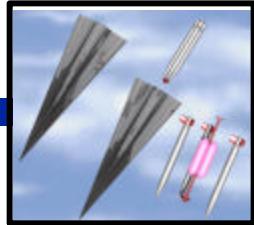
USS Cole,
October 2000

According to the Rumsfeld Commission, 25 nations have or are acquiring WMD. Several of these have or are acquiring long-range missiles.



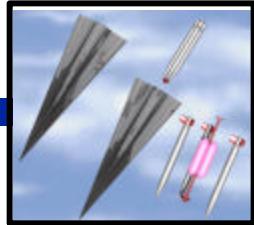
Formal Requirements

- **PGS MNS sponsored by AFSPC. Based on:**
- **Defense Planning Guidance; requires ability to “project military power rapidly across great distances”**
- **AFSP Mission Area Plan; established specific requirement for “conventional global, prompt response” with total response time in “hours” and less than one hour between strike order and target destruction**
- **PGS supports approved Mission Need Statements for Hard and Deeply Buried targets, Strategic Relocatable Targets, and Agent Defeat Weapons**



Doctrine, Strategy, and Studies

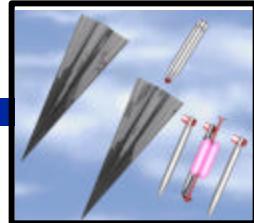
- ***USSPACECOM Long Range Plan*** required “On-Demand Force Application” delivering precision weapons “anywhere in the world within 90 minutes of launch”
- 1997 National Defense Panel Report: need“conventional, non-nuclear deterrent capability against use of WMD”
- Similar Requirements in:
 - ***Air Force Basic Doctrine***
 - ***Joint Vision 2020***
 - ***USAF Annual Planning and Programming Guidance***
 - ***Air Force Strategic Plan*** and ***AFSPC Strategic Master Plan***
 - ***AC2ISRC C2ISR Critical Capabilities***
 - ***Navy MNS for a Joint Tactical Strike Capability***



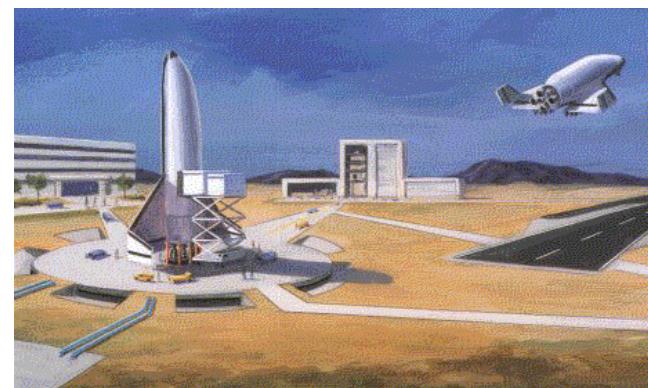
PGS and Deployed Forces

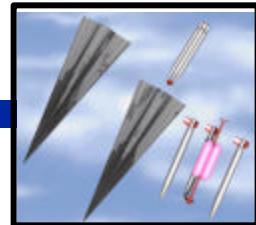
- PGS would complement, not replace, deployed and deployable forces
- PGS adds a unique capability to power projection “toolkit” for national and theater commanders
- Limited strikes could be done by PGS alone
- In major campaigns, PGS strikes against C4I nodes, air defense systems, etc., would “open the door” for aircraft and eliminate anti-access threats (WMD, TBMs, etc.)

PGS System Options



- Hypersonic Cruise Vehicle
- Ballistic Missile (based on ICBM or SLBM)
- Air-Launched Missile
- Space Operations Vehicle
- Space-Based Launch Platform



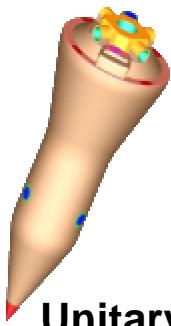


Front End Option- CAV

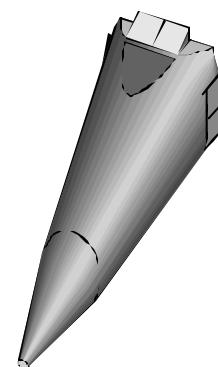
- Under AFSPC Development
- Maneuverable, guided vehicle launched from or through space
- Mass: Approx. 2000 lbs including payload
- Several possible configurations
- Could carry unitary penetrator, numerous smart weapons, even UAVs



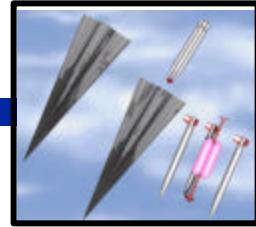
High Performance
Lifting Body



Unitary penetrator based on
Mk 11 RV aeroshell



Asymmetrical,
Bi-Conic
Lifting Body



Example of PGS Utility

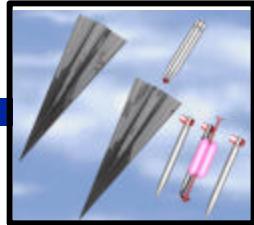
Operation El Dorado Canyon (Libya, 1986)

Force Element	No./Type Aircraft	CAV Attack	
Attack	 24 F-111 (1 lost) 14 A-6E	2 CAV w/WAASM or SSB 2 CAV w/WASSAM or SSB	
Force Protection, SEAD	 6 F-18, 6 A-7		
Support	 28 Tanker, 5 EF-111, 4 E-2C, 1 EA-6	Not Required	
Total Force Required	110+ Aircraft	4 sorties 4 CAVs	
Capital Cost (aircraft only)	\$5.05B	\$32M (CBM)	
Operation Cost	\$99.1M	\$32M (CBM)	
People risked (attack plane crews)	64	0	
Overflight issues	Serious	Minor	
Weather limitations	Serious	None	

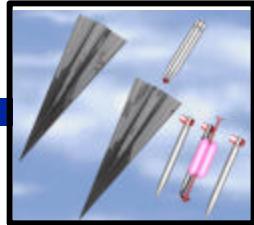
Notes:

- Attack aircraft numbers include airborne spares. Capital costs do not include Navy ships or AF air bases.
- Of 5 ground targets, 4 were objectives: Benina airfield was struck to protect US aircraft.
- All Libya targets were suitable for WAASM (no hard/deeply buried).
- “Serious” weather limitations means bad weather would have impacted strike. In this case, it did not.

- **PGS is endorsed in AF, Navy, USSPACE, and DoD visions, plans, and requirements documents**
- **PGS complements deployed forces by taking on rapid-strike missions, paving the way for other forces**
- **PGS is technologically feasible**
- **No reason NOT to pursue**

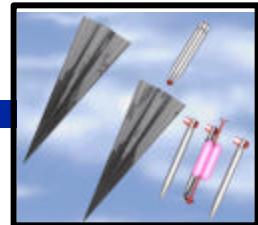


BACKUP SLIDES



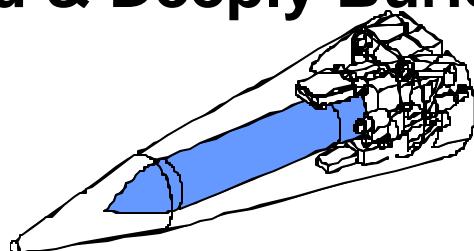
Treaty Clarifications

- **Space-launched PGS would not violate Outer Space Treaty**
 - Does not carry Weapons of Mass Destruction
- **Conventional Ballistic Missile legal if counted as ICBM under START**
- **Air-Launched missiles (ballistic or cruise) legal if missile or payload uses aerodynamic lift over some portion of trajectory**
- **Conventional SLBM not prohibited, some problems with verification**

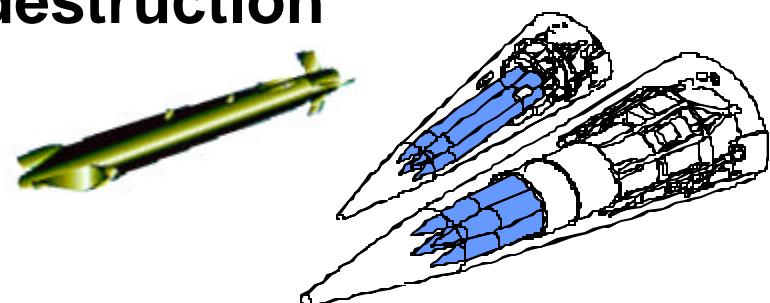


Potential CAV Payloads

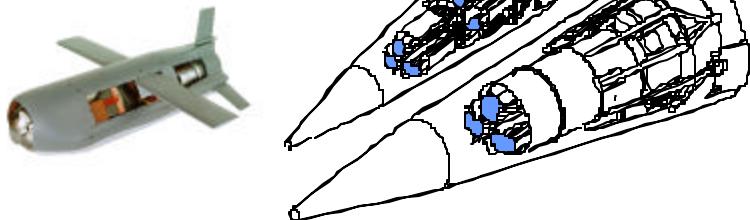
- **(One) Rigid Penetrator for Hard & Deeply Buried Targets**



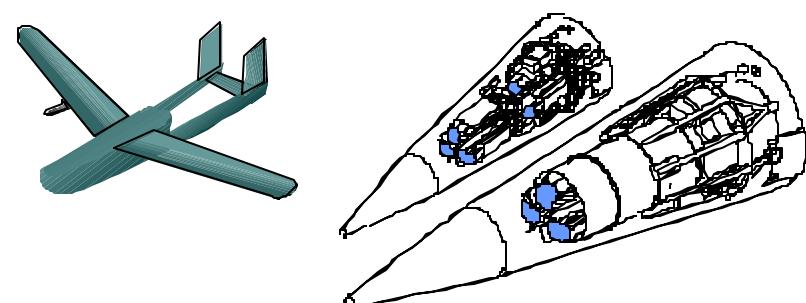
- **(Four) Small Smart Bomb System for facility destruction**

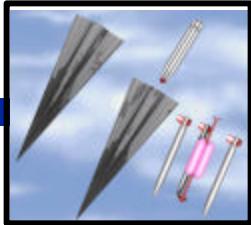


- **(Six) Wide Area Autonomous Search Munitions (WAASM) for terrestrial targets of all types**

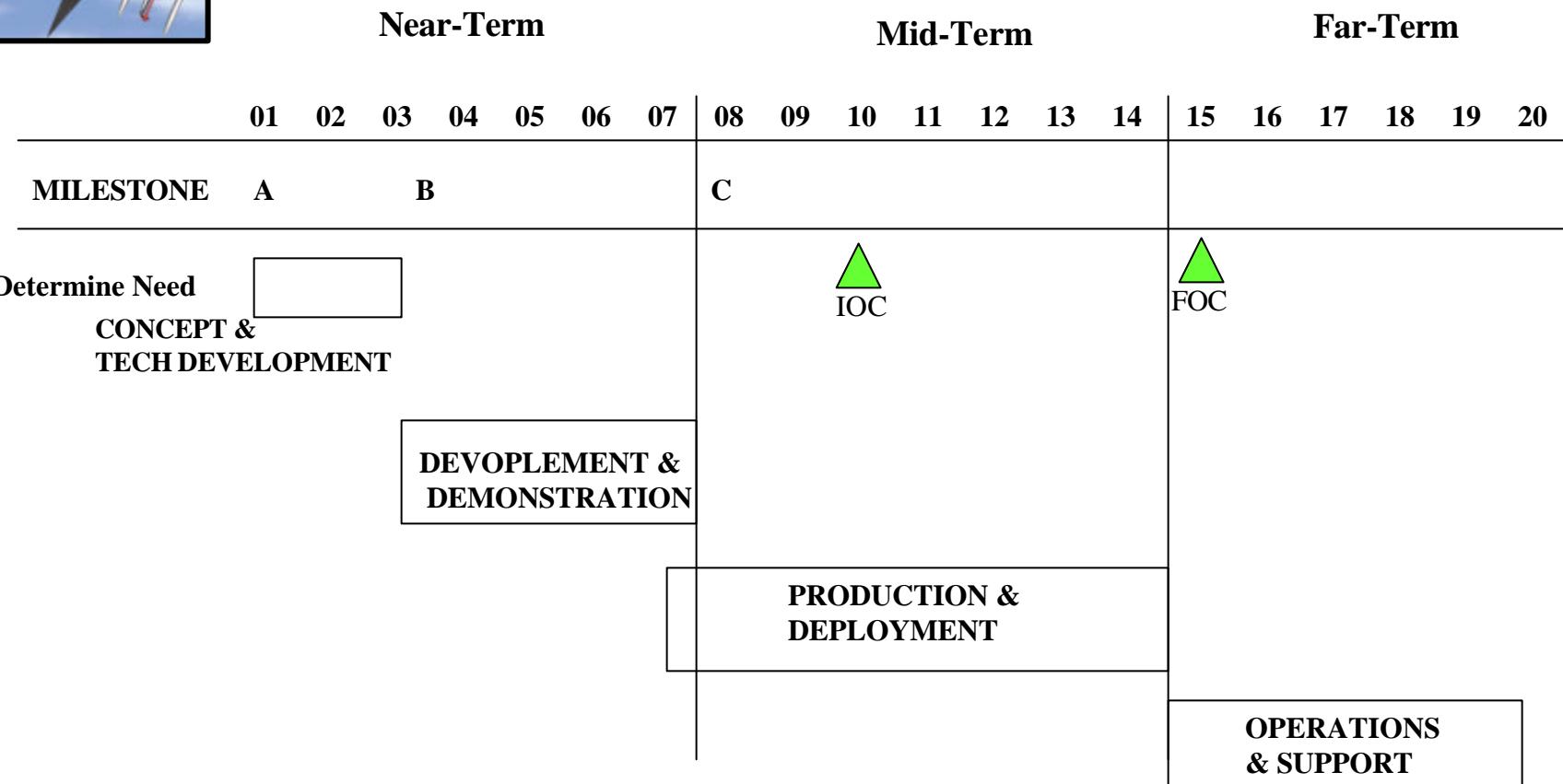


- **(Six) Unmanned Aerial Vehicle (UAV) for intelligence gathering, BDA**





CAV MILESTONE CHART



Unofficial ROM cost estimates: \$800M - \$1.3 B depending on launch option, schedule, production numbers, etc. (70-100 CAVs)